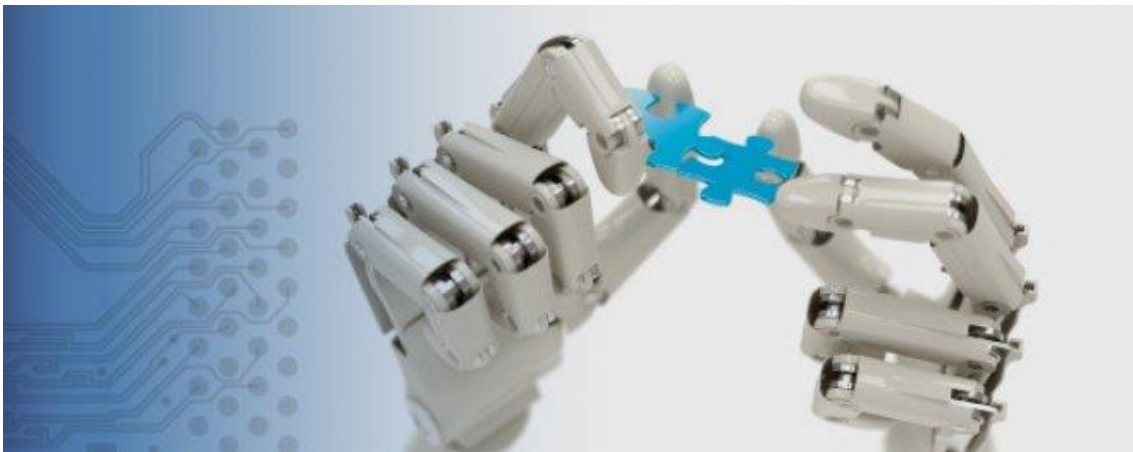


ROBOTICS MASTER

Universitat de Vic



Subject: Robotics Integration

Unit: 2: ROS

Exercixse 2.1 & 2.2: ROS Tutorials

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Date: 2015-10-30

2.1. ROS installation (Indigo version)

<http://wiki.ros.org/indigo/Installation/Ubuntu>

2.2 ROS Tutorials

Create a new repository at your GitHub called “ros_tutorials” and follow the tutorials at <http://wiki.ros.org/ROS/Tutorials>. Numbers 1,2,3,4,5,6,7,10,11. (8,9 are optionals). Once finished, indicate that to the professor through moodle

Find the files of tutorials 1 to 11 in the following repository of GitHub;

https://github.com/ToniSkan/ROS_Tutorials_Beginner.git

There can be find all catkin Workspace. Tutorials of this exercise can be found in the following link:

https://github.com/ToniSkan/ROS_Tutorials_Beginner/tree/master/catkin_ws/src/beginner_tutorials

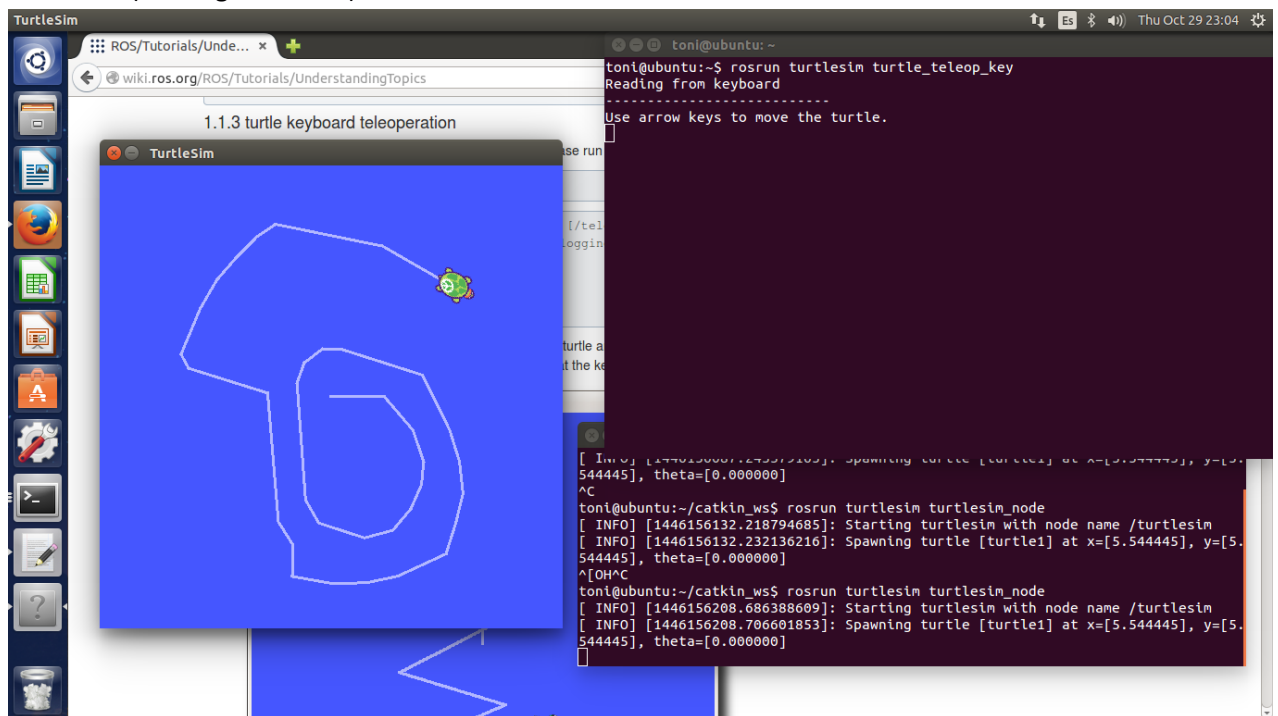
Listener and talker:

https://github.com/ToniSkan/ROS_Tutorials_Beginner/tree/master/catkin_ws/devel/lib/beginner_tutorials

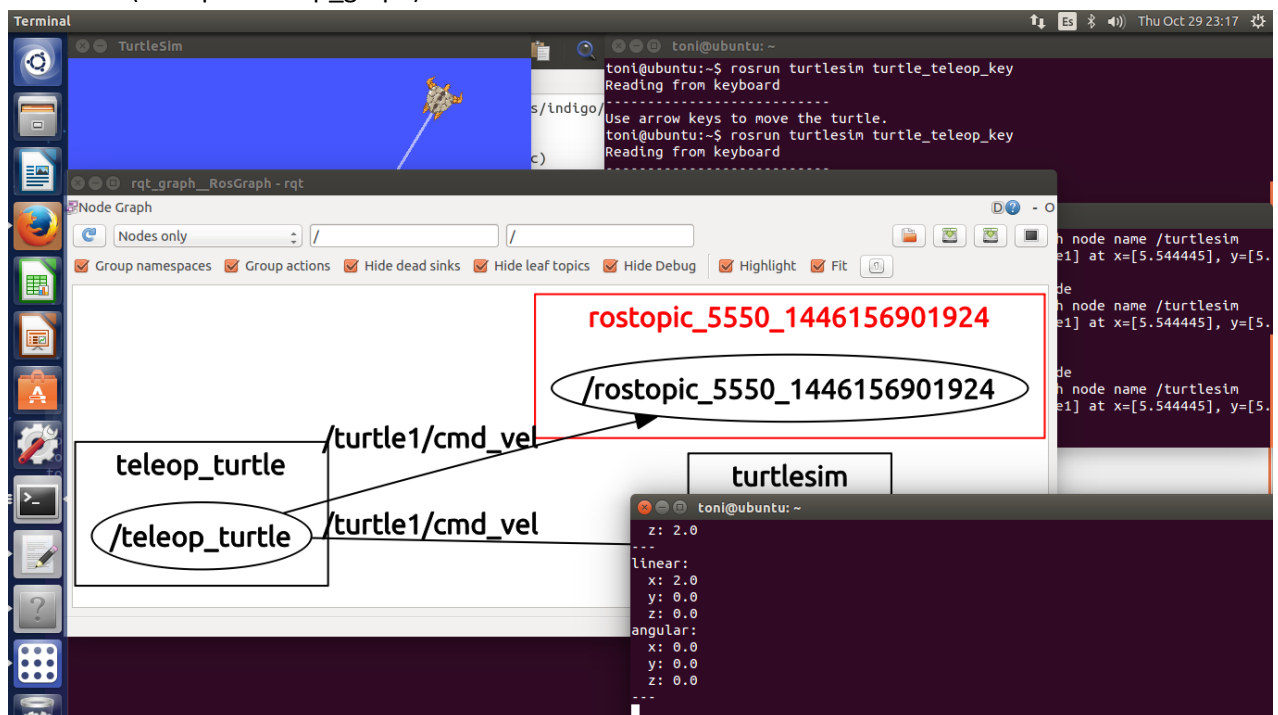
In the following pages screenshots to shown some progress of the tutorials:

Exercise 2.1 & 2.2: ROS Tutorials

Tutorial 6 (Moving the turtle)

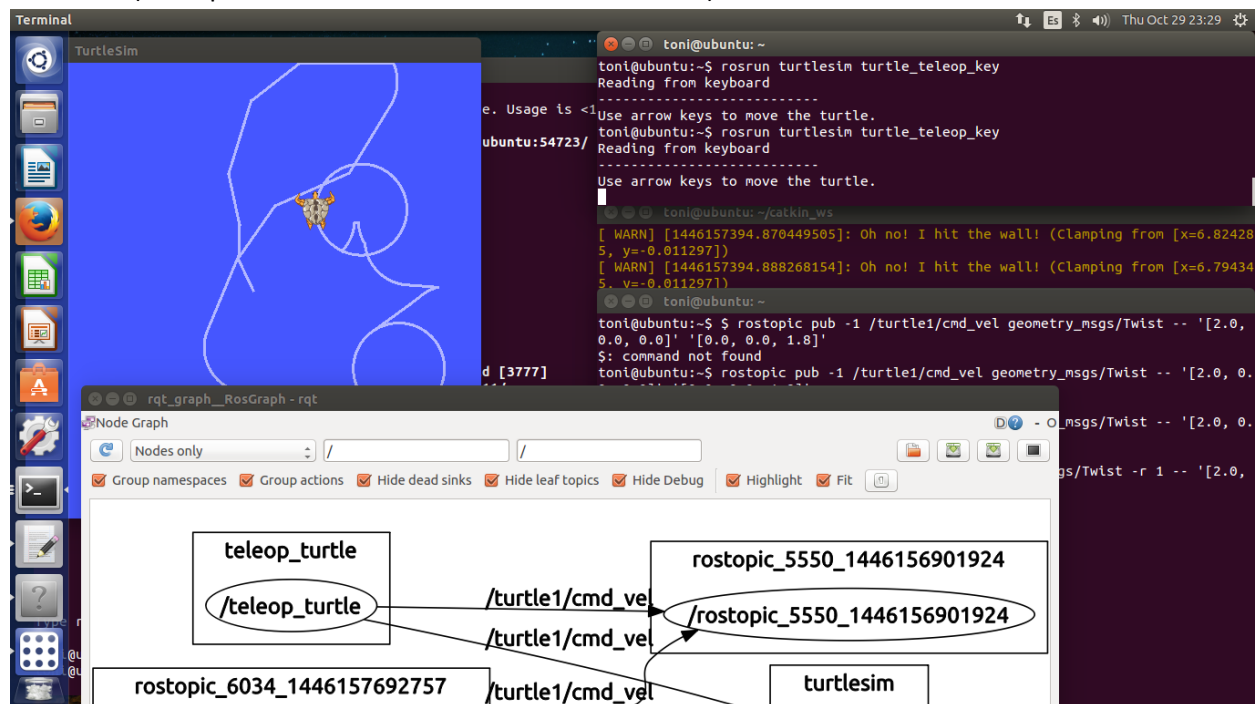


Tutorial 6 (rostopic and rqt_graph):

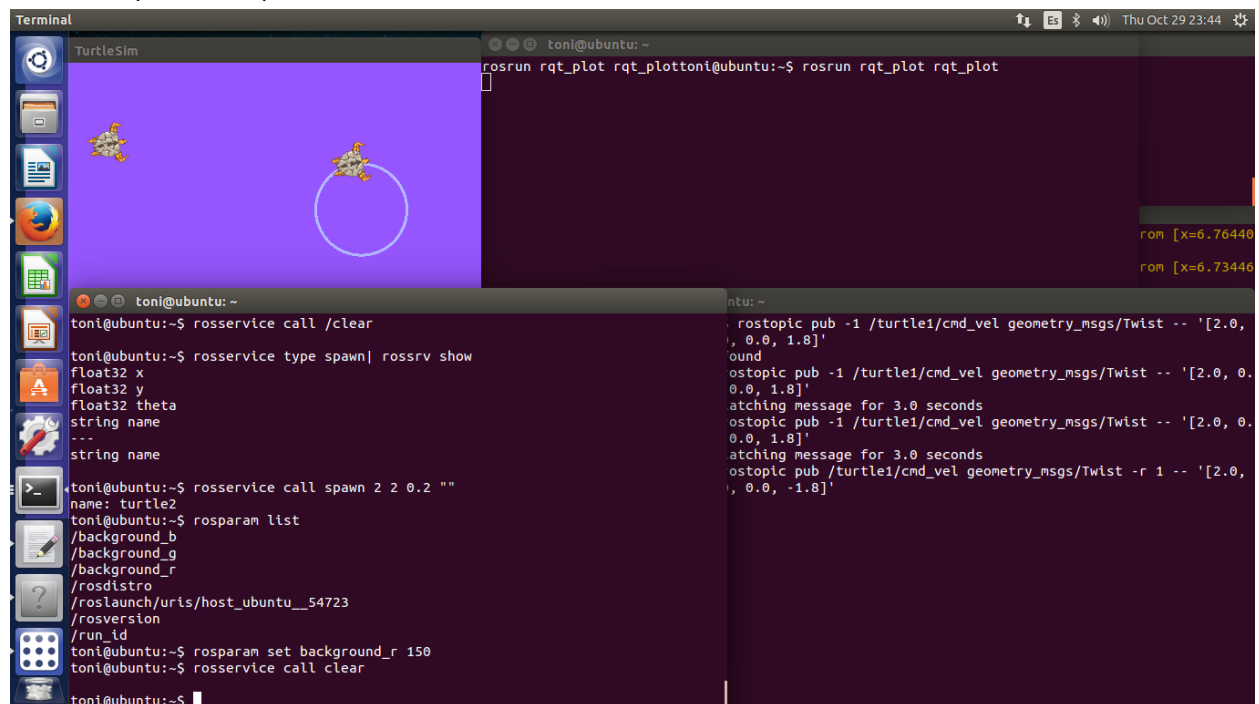


Exercise 2.1 & 2.2: ROS Tutorials

Tutorial 6 (Rostopic an automatic movements of the turtle)



Tutorial 7 (rosservice)



Tutorial 10 (rosmmsg)

The screenshot shows a ROS environment with a TurtleSim window on the left displaying a turtle on a purple background. In the center, a web browser displays the ROS documentation for Tutorial 10 (rosmmsg). On the right, a terminal window shows the following commands and output:

```

roscore x turtle x rqt_graph x toni@ubuntu:... x toni@ubuntu:... x
[ 87%] Built target beginner_tutorials_generate_messages_lisp
[100%] Generating Python msg __init__.py for beginner_tutorials
[100%] [100%] Built target beginner_tutorials_generate_messages_py
Built target beginner_tutorials_generate_messages_cpp
Scanning dependencies of target beginner_tutorials_generate_messages
[100%] Built target beginner_tutorials_generate_messages
toni@ubuntu:~/catkin_ws$ source devel/setup.bash
toni@ubuntu:~/catkin_ws$ rosmmsg show beginner_tutorials/Num
int64 num
toni@ubuntu:~/catkin_ws$ rosmmsg show Num
[beginner_tutorials/Num]:
int64 num
toni@ubuntu:~/catkin_ws$
  
```

Tutorial 10 (rossrv)

The screenshot shows a ROS environment with a web browser displaying the ROS documentation for Tutorial 10 (rossrv). In the center, a terminal window shows the following commands and output:

```

roscore x turtle x rqt_graph x toni@ubuntu:... x toni@ubuntu:... x
int64 sum
toni@ubuntu:~/catkin_ws/src/beginner_tutorials$ rossrv show AddTwoInts
[beginner_tutorials/AddTwoInts]:
int64 a
int64 b
---
int64 sum
[rospy_tutorials/AddTwoInts]:
int64 a
int64 b
---
int64 sum
toni@ubuntu:~/catkin_ws/src/beginner_tutorials$
  
```

Below the terminal window, a snippet of CMakeLists.txt is shown:

```

# generate_messages (
#   DEPENDENCIES
#   std_msgs # Or other packages containing msgs
# )
  
```

Exercise 2.1 & 2.2: ROS Tutorials

Tutorial 11 (listener and talker done)

```

rqt_graph
ROSCORE x  Turtle x  rqt_graph x  toni@ubuntu:... x  toni@ubuntu:... x
toni@ubuntu:~/catkin_ws/src$ ls
beginner_tutorials  CMakeLists.txt  rrbot
toni@ubuntu:~/catkin_ws/src$ cd ..
toni@ubuntu:~/catkin_ws$ ls
build  devel  params.yaml  src
toni@ubuntu:~/catkin_ws$ cd devel
toni@ubuntu:~/catkin_ws/devel$ ls
env.sh  include  lib  setup.bash  setup.sh  _setup_util.py  setup.zsh  share
toni@ubuntu:~/catkin_ws/devel$ cd lib
toni@ubuntu:~/catkin_ws/devel/lib$ ls
beginner_tutorials  librrbot_hw_real.so  pkgconfig  rrbot_hw
libdefault_rrbot_hw_sim.so  librrbot_hw_sim_plugin.so  python2.7
toni@ubuntu:~/catkin_ws/devel/lib$ cd beginner_tutorials
toni@ubuntu:~/catkin_ws/devel/lib/beginner_tutorials$ ls
listener  talker
toni@ubuntu:~/catkin_ws/devel/lib/beginner_tutorials$

```